

REMARKS**Rejections**

In the Office Action dated April 28, 2005 the Examiner rejected all pending Claims 105 through 116. First, the Examiner maintained his rejection based on obviousness type double patenting. While Applicant does not agree with the Examiner's analysis or reasoning, solely in order to further prosecution a terminal disclaimer is enclosed which overcomes this rejection. Hence this rejection is now moot.

Examiner also rejected all pending Claims 105 through 116 as anticipated by Buynak, the reference also cited earlier. In brief, the Examiner stated (Action, paragraph 9):

Buynak discloses a method of augmenting a video signal wherein augmenting pulses are added to the horizontal sync pulse intervals of a video signal to prevent a copy of the modified video signal (Abstract), which meets the limitation of adding a pulse to a selected position in a back porch region following a horizontal sync pulse of the copy-protected video signal. The augmenting pulses can have a negative amplitude, . . .

Further, in rejecting the dependent claims, the Examiner stated in pertinent part (paragraph 9):

Buynak discloses that the augmenting pulses have a width of at least .5ms [sic]. . .which meets the limitation of negative pulses having a width in the range of 1 to 2 ms [sic], and the augmenting pulses have a approximate amplitude of -40 IRE units. . .which meets the limitation of the negative pulses in the range of about -10 to -20 IRE units.

The Examiner appears to have not provided here specifics, however, regarding the subject matter of dependent Claims 110 and 116 going to the location of the negative pulses.

Traversal

The anticipation rejections are traversed. It is respectfully submitted that the Examiner has not properly applied or construed the disclosure of Buynak to the claims, which thereby distinguish thereover for each of at least the following separate reasons:

1. The Examiner misstates the teachings of what is cited as prior art in Buynak. That prior art teaches (even if relevant) adding positive going and pulses to the back porch, not negative going pulses.
2. The Examiner confused the start of horizontal synchronization with the start of the back porch. He similarly confused the horizontal sync pulse interval with the horizontal blanking interval.
3. The function of the Buynak added or augmenting pulses is different from those in accordance with the present invention and as claimed. Buynak uses these pulses as a primary or sole copy protection technique. In accordance with the present invention, added pulses supplement other copy protection techniques as an enhancement.
4. The Buynak augmenting pulses are added to the actual horizontal sync pulse, that is over the horizontal sync pulse. In contrast, in accordance with the present invention and as claimed the added pulses are in the back porch region trailing the color burst which in turn follows the horizontal sync pulse.
5. The Examiner's analysis of the amplitude of the Buynak augmenting pulses is that they meet the claimed -10 to -20 IRE units where in fact all the Buynak augmenting pulses are significantly bigger in amplitude and not within this range.
6. The Examiner misconstrued the width of the Buynak augmenting pulses as meeting the present claims. Buynak discloses 0.2 to 0.6 μ sec width whereas the claimed present range is much bigger at 1 to 2 μ sec, which is well outside the range of Buynak.

7. The Examiner further misconstrued or ignored the subject matter of Claims 110 and 116 directed to the exact location of the added pulse in accordance with the present invention. Buynak discloses the augmenting pulses as being before the color burst and in the actual horizontal sync pulse. In contrast, in accordance with the present invention, the added pulses follow the color burst.

Each of these is discussed in detail following. Claim amendments made herein, unless relied upon here for patentability, are to improve form and not intended to be limiting.

1. The Examiner misstates the teachings of the Buynak prior art

The Examiner stated in his Action at page 2, paragraph 3:

Applicant's argument that Buynak does not modify the back porch in any way is not persuasive because Buynak discloses that the large amplitude pulses are added to the back porch for copy protection purposes (Col. 1, line 56-65).

This citation is to the Background of the Invention portion of Buynak and refers to what is further described immediately before at column 1, beginning line 52 "The prior art includes techniques for modifying a video signal so it can be satisfactorily displayed on a receiver, while recorded copies of the modified video signal cannot be satisfactorily displayed." The following Buynak paragraph at column 1, lines 56-64 says in pertinent part "One such technique adds a large amplitude pulse to the back porch of the horizontal blanking interval. A variation of this technique alternately adds one of two pulses to the back porch."

It is respectfully submitted that none of this prior art discloses adding negative-going pulses to the back porch. Instead the references cited in Buynak itself disclose adding only positive going pulses. A detailed analysis of what is believed to be the relevant prior art (see the U.S. Patent documents cited on the cover page of Buynak), is that while some of these disclose adding pulses to the back porch, in all cases the added pulses are positive going. The following appear to be the relevant references cited in Buynak:

Morio, et al., U.S. 4,100,575 and U.S. 4,163,253 add a large amplitude pulse which is positive going to the back porch of a video signal. See Morio, 4,163,253, Figs. 2F and 2G showing the large positive going pulses having respectively the height of P and 2P added to the back porch. Clearly these are positive going.

The next relevant reference which shows the back porch added pulses is Ryan, U.S. 4,695,901, also cited on the cover page of Buynak which shows in its Fig. 2(a) the added AGC pulses 36 all of which are positive going. Note that these are interspersed between the normal sync pulses.

The third pertinent reference appears to be Kagota, U.S. 4,475,129, also cited on the cover page of Buynak where one of two pulses are added to the portion of the back porch, but both of these pulses are positive going as well. See Kagota, Fig. 2 showing the double-humped pulse 23, 24 and in Fig. 7, the double-humped pulse 23, 24 providing a mound-shaped pulse added to the back porch. On a subsequent video line as shown, the pulses of somewhat less amplitude but still positive going.

Therefore, it is clear that the relevant prior art described in Buynak consists of adding or inserting a positive pulse in the back porch rather than any negative pulse or negative going pulse. Thus Examiner misconstrued even the prior art portion of Buynak.

2. Examiner Confused Start of Horizontal Synchronization with the Start of Back Porch and Confused the Horizontal Sync Pulse Interval with the Horizontal Blanking Interval

The Examiner appears, perhaps unintentionally, to have confused certain basic video terminology. In his action at pages 3 and 4, paragraph 7, Examiner argues that in Buynak, Buynak discloses that "...Table 1 (Col. 6, lines 36-60) show the augmented pulses being started in ranges that included 1 to 2 microseconds from the back porch as discussed earlier." The Examiner is erroneously equating the beginning of the horizontal synchronization pulse with the beginning of the back porch region. This is incorrect. See Buynak Fig. 1 which (accurately) represents a standard video signal including the horizontal blanking interval. As shown, the breezeway of 0.6

microsecond duration and the burst (color burst) of 2.5 microsecond duration and the color back porch of 1.6 microsecond duration all reside in the back porch. In contrast, the horizontal sync pulse of 4.7 microseconds duration (labeled sync) is where the horizontal sync pulse is located. This is also where Buynak locates his augmenting pulses.

Additionally, it appears at page 4, paragraph 9 the Examiner confused two terms which are horizontal sync pulse interval and horizontal blanking interval. The Examiner states in pertinent part in this paragraph “. . . Buynak discloses a method of augmenting a video signal wherein augmenting pulses are added to the horizontal sync pulse intervals of the video signal to prevent a copy of the modified video signal (abstract), which meets the limitation of adding a pulse to a selective position in the back porch region following a horizontal sync pulse with the copy protected signal.” (Emphasis added.)

Correctly, Buynak recites in its abstract “Augmenting pulses are added to the horizontal sync pulse intervals of a video signal . . .” Buynak does add its augmenting pulses to the horizontal sync pulse itself as shown in Buynak Figs. 2, 3 and 4. However, the “horizontal sync pulse intervals” in Buynak is not the same as horizontal blanking interval.” As shown in Buynak Fig. 1, the horizontal blanking interval includes the front porch, sync, breezeway, color burst, and back porch. However, it is clear in Buynak that the augmenting pulses are only added within the time of the horizontal sync pulse itself. Presumably this is what is meant by the Buynak Abstract “the horizontal sync pulse intervals.” This is more accurately stated at Buynak column 3, beginning line 16 “Fig. 2 shows an example of a horizontal blanking interval portion of a video signal including three augmenting pulses added to the horizontal sync pulse.”

Hence it is clear that in Buynak the added pulses are only added to the horizontal sync pulse itself and not elsewhere in the horizontal blanking interval.

3. Buynak's Pulses do Not Enhance Copy Protection

In accordance with the present invention the added pulses are typically an enhancement to another copy protection technique. See, for instance, Specification, page 6, beginning line 9:

Addition of pulses to portions of the video signal after normal horizontal or video synchronization pulses cause an abnormal video retrace at this point, thereby being an effective enhancement to the prior art basic anti copy process. (Emphasis added.)

A similar description appears in the Specification at page 9, line 20:

Another embodiment to enhance horizontal jitter with illegal copying of video tapes is to use post-horizontal pseudo sync pulses of approximately 20 IRE amplitude. . . (Emphasis added.)

Therefore, the current method is typically an enhancement to another type of copy protection. No such enhancement suggestion is made in Buynak. To the contrary, Buynak teaches specifically that his augmenting pulses are the primary needed copy protection technique. See Buynak Background of the Invention at column 2 beginning line 4 discussing the prior art copy protection techniques involving adding pulses:

However, none of these techniques has been found to result in a displayed copy of the video signal which is sufficiently unsatisfactory. Further, none of these techniques modifies a video signal so as to prevent detection of its horizontal sync pulses during display of a copy of the modified video signal.

Buynak then goes on in his Objects and Summary of the Invention to tout his invention as the sole needed copy protection technique, immediately following at column 2 beginning line 14:

Therefore, one object of the present invention is to provide a technique for copy protecting a video signal which avoids the aforementioned disadvantages of the prior art. (Emphasis added.)

There is no suggestion in Buynak of using his technique to enhance other copy protection techniques and there is no indication he experimented with or even considered same.

Note Buynak column 11, lines 40-45 does suggest enhancing his technique with “a supplemental copy protection technique.”

Hence, typical employment of the method in accordance with the present invention is as an enhancement to other copy protection techniques whereas Buynak specifies that his is the primary copy protection technique overcoming the drawbacks of the purportedly unsatisfactory prior art.

Claim 1 as amended more clearly points this out. The Examiner indicated that he was ignoring the limitations of the present claims in the preambles for purposes of examination. However, independent Claims 105 and 111 have been amended substantially identically here to better point out, in the body of the claim, the anticopy enhancement aspect in accordance with this invention as disclosed in the specification at, for instance, pages 6 and 9 quoted above.

Claim 105 now recites in its concluding clause “wherein the copy protection of the video signal is enhanced by the added negative pulse.” This clearly distinguishes over Buynak, which is not an enhancement but is the sole or primary copy protection technique. The present amendments to Claim 105 do not specify whether the added pulse is applied before or after application of any other copy protection technique or indeed at the same time; all of these are contemplated in accordance with the invention. However, in any case, use of the present copy protection technique in conjunction with some other enhances copy protection, as described in the Specification at page 9, lines 20 and following as quoted above.

Hence, Claim 105 and, similarly, amended Claim 111, distinguish over Buynak for at least this first reason.

4. Buynak's Pulses Not In Back Porch

Next, it is respectfully submitted that, as pointed out above, the Examiner misinterpreted Buynak in terms of the location of the augmenting pulses as meeting the present claims. In accordance with the present invention, the added pulses are added “in a back porch region following

a horizontal sync pulse.” See Claim 105 and Claim 111, as amended, to conform in this respect to Claim 105.

Buynak Fig. 1 as referred to above shows the well known portions of a video signal although some of his labels, as pointed out in Applicant’s prior response, are not exactly standard terminology. The horizontal sync pulse is shown in Buynak as being “Sync”. This is followed by the color burst which Buynak calls the “Ref Burst”. This as shown occurs in the back porch region. Buynak is not exactly correct in terms of television terminology in characterizing the “Color back porch” as only following the color burst. Instead, it is generally regarded as better terminology to regard the portion following the horizontal sync pulse as being the back porch which includes the color burst.

In any case, however, it is clear as pointed out above that in each of Buynak Figs. 2, 3 and 4 that the augmenting pulses are shown as occurring in the actual horizontal sync (horizontal sync pulse) and being overlayed on the horizontal sync pulse itself. In each of Buynak Figs. 2, 3 and 4 the color burst on its back porch is shown as the hexagon waveform trailing the horizontal sync pulse. In each case the Buynak augmenting pulses, which are the pulses a, are shown as being located prior to the color burst. The operation of this is specified in Buynak column 3 beginning line 43 following:

It has been found that when the modified video signal is displayed on a television receiver, the augmenting pulses experience attenuation due to the horizontal sync circuitry of that receiver. . . The average amplitude during each horizontal sync pulse interval is unchanged, and the remaining originally negative portions of each horizontal sync pulse are correspondingly attenuated. (Emphasis added.)

Hence the theory of operation of the Buynak augmenting pulses requires that they be located in the actual horizontal sync pulse of the television signal so they can have the desired effect on the TV receiver’s horizontal sync circuitry. There is no suggestion in Buynak that if these pulses were displaced to the position for instance following color burst that they would have the same effects, and it is presumed the horizontal sync circuitry would not be reactive to same. Certainly

Buynak never suggests putting his augmenting pulses in any location other than the one shown in each of Figs. 2, 3 and 4. In each of these figures the location is identical, that is actually within the horizontal sync pulse.

The Examiner attempted to overcome this acknowledged major deficiency in Buynak in his Action at page 2, paragraph 3 where he stated:

Applicant's argument that Buynak does not modify the back portion in any way is not persuasive because Buynak discloses that the large amplitude pulses are added to the back porch for copy protection purposes (Col.1, lines 56-65).

Then the Examiner quotes the MPEP as patents being relevant as prior art for all they contain. However, it is not seen where this rejection makes sense, as pointed out above in the discussion of the Buynak prior art references. The referred-to Buynak passage column 1, lines 56-65 is clearly of prior art techniques (see Buynak column 1, line 52) which Buynak dismisses in the immediately following paragraph beginning column 2, line 4 (quoted above at page 8) as being inadequate. Clearly the Buynak description at column 1, line 56 and following is of the prior art techniques of adding pulses to the back porch. There is no connection drawn between this prior art and the Buynak technique of adding pulses to the actual horizontal sync pulse (horizontal sync pulse interval). The disclosure of Buynak's actual approach is that of his Figs. 2, 3 and 4 with the augmenting pulses added to the horizontal sync pulse and not in the back porch and not at or after the color burst. While Buynak does disclose both the prior art technique of adding pulses to the back porch and also discusses his own method in Figs. 2, 3 and 4 of adding pulses to the horizontal sync pulse, there is no suggestion by him to combine same. Further, the prior art cited in Buynak adds positive going pulses as pointed out above, not negative amplitude pulses.

The Examiner cannot draw disparate aspects from one patent disclosure and combine them into one teaching to meet a claim for anticipation. These are not even two separate embodiments of one purported invention – they are two different copy protection techniques, one of which is denigrated by Buynak as unsatisfactory. Moreover, as pointed above, there is no suggestion in Buynak that moving his augmenting pulses to the back porch would be effective and

he states that such a technique is actually ineffective at column 1, lines 56-65, hence, teaching away from same.

Hence this aspect of the rejection fails and it is clear that Buynak does not meet either of the aspects in the current claims of “adding a pulse having a selected negative amplitude to a selected position in a back porch region following a horizontal sync pulse” (emphasis added). See Claim 105. Hence clearly Buynak fails to meet these aspects of both Claims 105 and 111. For this additional reason, Claims 105 and 111 distinguish over Buynak and the Examiner has failed to show how Buynak meets same.

The dependent claims, of course, distinguish over Buynak for at least the same reason as do the base claims. However, additionally, each of the dependent claims additionally distinguishes over Buynak for the reasons pointed out following.

5. Buynak’s Amplitude Is Not In -10 to -20 IRE Unit Range

Third, as to Claim 108, which now recites “the amplitude of the negative pulses is in the range of -10 to -20 IRE units,” clearly this is not shown in Buynak. Claim 108 has been amended to make it clearer by deleting the word “about” as have Claims 107, 109, 110 and similarly the claims dependent upon Claim 111.

The Examiner cited, as meeting Claim 108, Buynak Table 1, column 6, lines 36-60 as showing augmented pulses of varying amplitudes including that of -30 and -40 IRE units, which the Examiner said “would be in the range of about -10 to -20 IRE units.” First, Claim 107 has been amended so that it no longer recites “about” so the Examiner cannot rely on this to expand the recited range.

Next, Buynak does not add any pulses to the back porch, so Table 1 is not relevant to Claim 108. Table 1 of Buynak and the accompanying text of Buynak emphasize that the Table 1 pulses are in the “horizontal sync pulse interval,” not in the back porch. See Buynak column 5 lines 63-68 stating “For example, an augmenting pulse of amplitude of ± 80 IRE units, when added to the

horizontal sync pulse interval ...” (emphasis added). Also see Buynak column 6 lines 33–36:

“Furthermore, elimination of the most sensitive receivers permits augmenting pulses to be placed in the first half of the horizontal sync pulse ...” (emphasis added).

Further, Buynak Table 1 shows only one entry for –30 IRE units amplitude and in the immediately following column the effect is shown as being “0,” hence, no effect. Thus, the –30 IRE units according to Buynak did not result in any effect. The smallest absolute value amplitude which had any effect was –40 IRE units and also greater negative numbers of IRE units such as –50, –60, etc. Hence, the minimum absolute value amplitude of pulse having any effect in the negative range was 40 IRE units.

It is not seen how such a pulse of –40 IRE units in Buynak would fall within the Claim 107 range of –10 to –20 IRE units, even if Table 1 were relevant. The sync tip level, as well known and pointed out by Buynak (at column 5, line 51), is –40 IRE units. Hence in Buynak the minimum amplitude of the added pulse necessary to have any effect is of the same level. In contrast, in accordance with the present invention which, of course, does not put the pulses in the horizontal sync pulse but in the back porch, it has been found that it is effective at –10 to –20 IRE units, which is a much smaller negative amplitude and clearly outside Buynak’s disclosed range. Hence, at least for this additional reason Claim 108 distinguishes over Buynak as does similar Claim 114.

6. Buynak’s Pulse Width is Not 1 to 2 Microseconds

Fourth, Claim 109 recites “the negative pulse has a width in a range of 1 to 2 microseconds.” (Again, the word “about” has been deleted for greater clarity.) The Examiner cited against this (in his paragraph 9) that Buynak discloses that the augmenting pulses have a width of at least .5 microseconds citing Buynak column 10, lines 40-42. This however is a citation to an inappropriate portion of Buynak. This part of Buynak, with the passage beginning at line 37, refers to “another video signal modification technique comprises adding pairs of pseudo-sync pulses to lines in the vertical blanking interval not used for equalizing pulses. . . The first pseudo-sync pulse of

each pair is a negative pseudo-sync pulse having a duration of at least 0.5 microseconds. . .”

(Emphasis added.) This is not a description of the Buynak approach, but instead is another prior art copy protection approach referring to the pseudo-sync anticopy pulses developed by Macrovision Corp., the assignee of the present application (see Ryan U.S. 4,695,901). This passage does not apply to the Buynak augmenting pulses.

Instead, the Buynak augmenting pulses have the widths shown in Tables 1 and 2 where the negative amplitude augmenting pulses have a width extending (see 2nd column (a) labeled “width” in Table 1) from .2 microseconds to .6 microseconds. Note there is a .75 microsecond width pulse, but this is only for positive going pulses. Hence, the relevant Buynak range is 0.2 to 0.6 microseconds. This 0.6 microseconds is, of course, about half the minimum of the range in Claim 109 of 1 to 2 microseconds. This is a significant difference and it cannot be seen how the Examiner considers the range of 0.2 to 0.6 in Buynak to fall within the claimed range of 1 to 2 microseconds or even to render it obvious. Hence, at least for this reason Claim 109 and similar Claim 115 distinguish over Buynak.

7. Buynak’s Pulse Location is Not 1 to 2 Microseconds After Burst.

Fifth, the Examiner rejected Claim 110 which indicates the location of the negative pulse being “positioned in the range of 1 to 2 microseconds” citing Buynak, but without citing any particular portion of Buynak. Perhaps the Examiner is relying on his analysis at pages 3–4 of his Action, paragraph 7, where he states “... Table 1 (Col. 6, lines 36–60) shows the augmented pulses being started in ranges that include 1 to 2 microseconds from the back porch as discussed earlier. This is not the case; in Buynak Fig. 4 for example interval “s” is described as an offset from the start of the horizontal sync pulse interval, see column 5, lines 57–38. This is not after the back porch but well before it. Hence the rejection of Claim 110 is deficient.

Claim 110 has been amended only to improve its form by adding “in the back porch region” for clarity rather than for reasons of patentability and this is not intended to further limit the claim. Claim 110 specifies the location of the added negative pulse as being “after” the color burst

and in a particular time range following the color burst. Clearly, no such relevant disclosure is shown in Buynak, which the Examiner concedes by not citing any particular portion of Buynak. As pointed out above, the Buynak augmenting pulses are always added in the horizontal sync pulse region before color burst rather than after. Hence, clearly, Buynak does not meet or even suggest the subject matter of Claim 110 and similar Claim 116, which thereby distinguish thereover.

Each of Claim 107 and 113, which recite in combination the subject matter of Claims 108 and 109 and 110, clearly also distinguishes over Buynak for at least the same reasons as does each of Claims 108, 109 and 110 and hence Claims 107 and 113 are also patentable.

New Claims.

New dependent Claims 117, 118 are added here. Claim 117 reads on, e.g. the specification at page 20, lines 2–5. Claim 118 reads on, e.g., page 21, lines 1–3. Both are directed to features not shown in Buynak. This amplitude modulation in accordance with Claims 117, 118 (see specification page 21, lines 10–14) advantageously causes the picture in the copy to jump and is irritating to the viewer, rendering the copy useless.

CONCLUSION

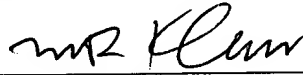
All pending Claims 105 through 118 distinguish over Buynak and are patentable and allowance thereof is requested.

If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. **136922000503**.

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